

Attorney Docket No. RECP:111US
U.S. Patent Application No. 10/711,424
Reply to Office Action of August 10, 2007
Date: November 9, 2007

Current Status of the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of the Claims:

Claim 1 (Currently Amended): An apparatus for measuring feature widths on masks for the semiconductor industry, comprising a carrier plate that is retained in vibrationally decoupled fashion in a base frame; a scanning stage, arranged on the carrier plate, wherein the carrier plate carries the mask to be measured; an objective arranged opposite a surface of the mask; and a liquid is provided between the objective and the surface of the mask, and wherein a precision metering nozzle, which applies the liquid exclusively onto at least one measurement point located on the surface of the mask, is associated with the objective.

Claims 2-18 (Cancelled).

Claim 19 (New): An apparatus for measuring feature widths on masks for the semiconductor industry, comprising:

 a base frame;
 a carrier plate retained in a vibrationally decoupled fashion in the base frame;
 a mask comprising a surface;
 an objective arranged opposite the surface of the mask;
 a scanning stage operatively arranged on the carrier plate to carry the mask;
 a device associated with the objective, operatively arranged to apply a liquid between the objective and the surface of the mask.

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Claim 20 (New): The apparatus as recited in Claim 19 wherein the mask further comprises at least one measurement point on the surface, and the device is operatively arranged to apply the liquid exclusively onto the at least one measurement point.

Claim 21 (New): The apparatus as recited in Claim 19 wherein the device comprises a precision metering nozzle.

Claim 22 (New): The apparatus as recited in Claim 19 wherein the device is integral to the objective.

Claim 23 (New): The apparatus as recited in Claim 22 wherein the device comprises a cylinder completely surrounding the objective and separated from the objective by a gap.

Claim 24 (New): The apparatus as recited in Claim 23 wherein the liquid is transportable through the gap.

Claim 25 (New): The apparatus as recited in Claim 22 wherein the objective comprises a circumference and the device comprises at least one conduit arranged coaxially with the circumference of the objective.

Claim 26 (New): The apparatus as recited in Claim 25 wherein the liquid is transportable through the at least one conduit.

Claim 27 (New): The apparatus as recited in Claim 26 wherein the device comprises three conduits.

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Claim 28 (New): The apparatus as recited in Claim 19 further comprising a special frame and a special peripheral seal, wherein the mask is arranged in the special frame and on the special peripheral seal, and wherein the liquid applied to the surface is securely contained within the special frame.

Claim 29 (New): The apparatus as recited in Claim 28 wherein the special seal comprises polytetrafluoroethylene.

Claim 30 (New): The apparatus as recited in Claim 19 wherein the liquid comprises water.

Claim 31 (New): The apparatus as recited in Claim 19 wherein the liquid comprises oil.

Claim 32 (New): The apparatus as recited in Claim 19 wherein the objective is configured for wavelengths of the illuminating light smaller than 300 nm.

Claim 33 (New): The apparatus as recited in Claim 19 wherein the objective is configured for wavelengths of the illuminating light smaller than 248 nm.

Claim 34 (New): The apparatus as recited in Claim 19 wherein the objective is wetted with the liquid.

Claim 35 (New): An apparatus for measuring feature widths on semiconductor substrates, comprising:

a base frame;

a carrier plate retained in a vibrationally decoupled fashion in the base frame;

a semiconductor substrate comprising a surface;

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an objective arranged opposite the surface of the semiconductor substrate;
a scanning stage operatively arranged on the carrier plate to carry the semiconductor substrate;

a device associated with the objective, operatively arranged to apply a liquid between the objective and the surface of the semiconductor substrate.

Claim 36 (New): The apparatus as recited in Claim 35 wherein the semiconductor substrate further comprises at least one measurement point on the surface, and the device is operatively arranged to apply the liquid exclusively onto the at least one measurement point.

Claim 37 (New): The apparatus as recited in Claim 35 wherein the objective is configured for wavelengths of the illuminating light smaller than 300 nm.

Claim 38 (New): The apparatus as recited in Claim 35 wherein the objective is configured for wavelengths of the illuminating light smaller than 248 nm.

Claim 39 (New): The apparatus as recited in Claim 35 wherein the objective is wetted with the liquid.